IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical arrangement for interacting with a radiation beam ~~(7)~~, the optical arrangement comprising an optical system and a compensator, the compensator including a first optical element ~~(NPS1)~~, the first optical element having a phase structure comprising stepped annular areas ~~(51, 52, 53)~~ forming a non-periodic pattern of optical paths of different lengths, the compensator being arranged to generate:

[[-]] a first wavefront deviation introduced by the variation of a first parameter during interaction of the radiation beam ~~(7)~~ with the compensator, the first wavefront deviation being arranged to counteract a wavefront deviation introduced by the variation of the first parameter during interaction of the radiation beam ~~(7)~~ with the optical system; and

[[-]] a second wavefront deviation introduced by the variation of a second, different, parameter during interaction of the radiation beam ~~(7)~~ with the compensator,

~~characterised in that~~ wherein the compensator further includes a second optical element ~~(NPS2)~~ formed from a different material than the first optical element and having a phase structure comprising stepped annular areas ~~(54, 55, 56)~~ forming a non-periodic pattern of optical paths of different lengths, the second optical element being arranged to reduce said second wavefront deviation,

wherein the annular areas of the first optical element are stepped by a step height of h_j and the annular areas of the second optical element are stepped by a step height of b_j and wherein the first optical element is arranged such that, for each said annular area, the step height h_j is substantially equal to:

$$h_j = m_j \frac{\lambda}{n_1 - 1}$$

where m_j is an integer, λ the wavelength and n_1 is a refractive index of a first material from which the first optical element is made, and

wherein the second optical element is arranged such that, for each said annular area, the step height b_j is substantially equal to:

$$b_j = q_j \frac{\lambda}{n_2 - 1}$$

where q_j is an integer, λ the wavelength and n_2 a refractive index of a second material of which the second optical element is made.

Claim 2 (Canceled)

3.(Currently Amended) ~~An~~ The optical arrangement according to ~~claim 2~~ claim 1, wherein the first optical element and the second optical element have correspondingly arranged annular areas, and wherein the step heights h_j, b_j are interrelated.

4.(Currently Amended) ~~An~~ The optical arrangement according to claim 3, wherein the step heights h_j, b_j are related by way of a substantially constant parameter K, the value of the constant parameter K depending on ~~the~~ a compensating function of the

respective optical elements.

5. (Currently Amended) ~~An~~ The optical arrangement according to claim 4, wherein:

$$K = \frac{m_j}{q_j} .$$

6. (Currently Amended) ~~An~~ The optical arrangement according to claim 4, wherein:

$$K \approx -\frac{\frac{1}{\lambda} - \frac{\frac{dn_2}{d\lambda}}{n_2 - 1}}{\frac{1}{\lambda} - \frac{\frac{dn_1}{d\lambda}}{n_1 - 1}} ,$$

and wherein the second parameter is a wavelength of the radiation beam ~~(7)~~, where $\frac{dn_1}{d\lambda}$ is a dispersion of the first material and $\frac{dn_2}{d\lambda}$ is a dispersion of the second material.

7. (Currently Amended) ~~An~~ The optical arrangement according to

claim 4, wherein:

$$K \approx -\frac{(n_2 - 1)\alpha_2 + \frac{dn_2}{dT}}{(n_1 - 1)\alpha_1 + \frac{dn_1}{dT}}$$

where α_1 and α_2 are the thermal expansion coefficients, and $\frac{dn_1}{dT}$ and $\frac{dn_2}{dT}$ are the temperature coefficients of refractive index, of the materials from which the first and second optical elements are formed,

and wherein the second parameter is a temperature of the optical arrangement.

8. (Currently Amended) ~~An~~ The optical arrangement according to claim 4, wherein:

$$K \approx -\frac{n_1}{n_2},$$

and wherein the second parameter is an angle of incidence of the radiation beam ~~(7)~~.

9. (Currently Amended) ~~An~~ The optical arrangement according to claim 4, wherein:

$$K \approx -\frac{(n_1 - 1)\frac{dn_2}{dp}}{(n_2 - 1)\frac{dn_1}{dp}},$$

where $\frac{dn_1}{dp}$ and $\frac{dn_2}{dp}$ are the polarization coefficients of refractive index of the materials from which the first and second optical elements are formed,

and wherein the second parameter is a polarization of the radiation beam ~~(7)~~.

10. (Currently Amended) ~~An~~ The optical scanning device comprising ~~an~~ the optical arrangement according to claim 1, the device being arranged for scanning an optical record carrier having an information layer ~~(2)~~ using a radiation source ~~(9)~~.

11. (New) An optical arrangement for interacting with a radiation beam, the optical arrangement comprising an optical system and a compensator, the compensator being configured to generate:

a first wavefront deviation introduced by the variation of a

first parameter during interaction of the radiation beam with the compensator, the first wavefront deviation being configured to counteract a wavefront deviation introduced by the variation of the first parameter during interaction of the radiation beam with the optical system; and

a second wavefront deviation introduced by the variation of a second, different, parameter during interaction of the radiation beam with the compensator;

the compensator comprising:

a first optical element, the first optical element having a phase structure comprising stepped annular areas forming a non-periodic pattern of optical paths of different lengths; and

a second optical element formed from a different material than the first optical element and having a phase structure comprising stepped annular areas forming a non-periodic pattern of optical paths of different lengths, the second optical element being configured to reduce said second wavefront deviation;

wherein the compensator is further configured to compensate for variation of the first parameter without substantially affecting the second wavefront deviation; and

wherein the first parameter includes temperature, angle of incidence, polarization and wavelength of the radiation beam.

12. (New) The optical arrangement of claim 11, wherein materials of the first optical element and the second optical element have different refractive indices and different temperature coefficients of refractive index.

13. (New) The optical arrangement of claim 11, wherein materials of the first optical element and the second optical element have different refractive indices, different thermal expansion coefficients and different temperature coefficients of refractive index.

14. (New) The optical arrangement of claim 11, wherein materials of the first optical element and the second optical element have different refractive indices and different polarization coefficients of refractive index.

15. (New) The optical arrangement of claim 11, wherein the

first optical element and the second optical element are configured to make the optical arrangement both achromatic and athermal simultaneously.

16. (New) The optical arrangement of claim 11, wherein the first optical element and the second optical element are configured to make the optical arrangement both achromatic and having reduced field of view dependence simultaneously.